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Marina Tolmacheva

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MARINA TOLMACHEVA

THE EARLY RUSSIAN EXPLORATION AND MAPPING OF THE CHINESE FRONTIER

BETWEEN 1550 AND 1700, the great principality of Muscovy gained control of all northern Asia from the Volga and the Urals to the Pacific Ocean. In the eighteenth century Russia expanded to the Kurile and the Aleutian islands and to Alaska, and in the early nineteenth century attempted colonization of Northern California and Hawaii. While this expansion in many ways resembled that of Spain, Portugal, England, Holland and France, the enormous albeit inhospitable territory which it brought under Moscow's control was mostly contiguous with the early Russian state. Because of this, and because the territories joined to Russia were rich in natural resources and inhabited by tribes with diverse cultures, the conquest helped to transform the relatively poor and weak East European, Orthodox, Slavic Muscovite state into the large, powerful, resourceful, multi-national, multi-ethnic and multi-cultural Eurasian Empire of Russia.

The following discussion will highlight the most important stages in the history of the Russian cartography of the Sino-Siberian frontier. I distinguish three turning points in Russo-Chinese diplomacy which also mark cartographic advances. The first is the burst of intelligence-gathering activity begun by the 1675 embassy to Peking led by Nicolae Milescu Spathary and concluded with the signing of the Nerchinsk border Treaty of 1689. The second is the border demarcation effected and recorded in conjunction with the signing of the Kiakhta Treaty of 1727. The third is the exploration campaign of 1848-1863 initiated by the Governor of Eastern Siberia Murav´ev which brought Russian military presence to the Amur and Sakhalin Island and resulted in Russia's huge territorial gains at China's expense as a result of the treaties of Aigun (1858) and Peking (1860). Below, these stages of the general history of Russian geography are set against a brief outline of the chronology and institutional background of Russian cartography.

In evaluating the Russian cartographic enterprise in light of the aspirations of the imperial state, I propose that the following three phenomena were the key factors which conditioned, fashioned, paced, and determined the eventual outcome of the

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Russian effort: (1) the integration of the cartographical enterprise in government affairs and diplomacy; (2) radical modernization of Russian geography and cartography in the early decades of the eighteenth century; and (3) the limitations on cartographical progress inherent in Russian policies and the institutional framework.

Siberia

Let us first turn to Siberia and the most significant Russian maps of the seventeenth and eighteenth centuries relating to the Russo-Chinese border. In addition to the maps' contents, I will discuss the process and the nature of geographic intelligence gathering and mapping as they developed on the Sino-Siberian frontier and in the Amur region. I shall conclude with a few general comments on cartography in the service of the Russian state.

A prominent historian of Russian activities on the Pacific has offered this assessment of Russia's early eastward expansion:

> "Russian exploits, like those of their West European contemporaries, were the work of a handful of adventurers (in government or private service), who were driven by wanderlust, desperation, ambition, restlessness and greed. Until 1700 their effort was neither a meticulously planned nor carefully executed undertaking. They triumphed because they had superior technical knowledge and weapons; because they skillfully utilized the vast navigable river system; because they cleverly exploited natives as guides, interpreters, informers and providers of transport; and because they encountered no significant organized native or West European challenge."[1]

In regard to geographical aspects of the Russian advance into Asia, this summary needs to be moderated by several additional considerations. It must be stated first, that (1) Russians quickly progressed beyond simple inquiry and use of native guiding skills to intellectual appropriation of geographical information and to development of new data. (2) While many early forays in Transbaikalia (as elsewhere) indeed had been chancy adventures undertaken with little or no government support, the state maintained a steadfast interest in the geography of the area and especially routes to China. (3) Within the first few years of entering Transbaikalia in the 1640s Russians ran into Qing authorities and were made aware of trespassing on the Chinese zone of influence. In the 1680s China challenged Russia on the border issue, successfully pushed Russians back from the Amur and held them off for 160 years.

Acquired at the turn of the seventeenth century, the new colony of Siberia was governed through simple extension to it of Muscovy's existing administrative

1. Basil Dmytryshyn, "The administrative apparatus of the Russian-American Company, 1798-1867," *Canadian-American Slavic Studies*, 28, 1 (Spring 1993): 2.

The present paper was read at the 47th Annual Meeting of the Association for Asian Studies on April 8, 1995 in Washington, DC.

structure. A Siberian Bureau (*Sibirskii stol*) set up 1599 in Moscow's Office for Kazan (*Kazanskii prikaz*), was transformed in 1637 into a separate Siberian Office (*Sibirskii prikaz*); this lasted until 1763[2] when, as part of Catherine II's modernizing reforms, she decreed the creation of the Governorate of Siberia. The latter embraced the whole of Siberia and the Russian Far East until 1847. The Siberian governor (*voevoda*, a high military rank) resided at the west Siberian town of Tobolsk and was superior to *voevody* of towns further east. Due to overlapping spheres of competence of Russian government offices, Siberian affairs were handled in a number of other state departments as well. Most international affairs were centered at the Foreign Office (*Posol´skii prikaz,* lit. "Ambassadorial Office"). Among *prikaz* technical personnel were scribes, translators, and artists and engravers who also were often engaged in map-making.

Maps

The majority of early Russian maps (*chertezh*) were produced for military and administrative purposes. They were kept in local archives, Moscow's regional offices and branch offices of the central government. The Privy Chamber (*Tainyi prikaz*) and the Estate Office (*Pomestnyi prikaz*) had hundreds of maps. The Military Office (*Razriadnyi prikaz*) commissioned maps of the western and southern frontier areas (*Ukrainnye zemli*).[3] Although records show that maps of Siberia and China had been preserved at the Foreign Office as well as Siberian Office, the majority of extant maps were found in Siberia in the eighteenth century. To this day, many remain unpublished.

The earliest extant depictions of China in Russian cartography are found on maps of Semen Remezov, the author of hundreds of Siberian maps of the traditional *chertezh* style,[4] who worked at the turn of the eighteenth century. Existence of earlier maps of Siberia and routes to China is recorded in documents and attested to in maps of "Tartaria" produced in West Europe (e.g., Ortelius 1570, Isaac Massa 1610, Bleau 1663, Witsen 1687 and later). General maps of Siberia by Remezov are elaborations of an earlier map, commissioned in 1667 by the Siberian *voevoda*

2. George V. Lantzeff, *Siberia in the seventeenth century: A study of colonial administration* (Berkeley: University of California Press, 1943): 5. For a relevant collection of Russian documents translated into English, see Basil Dmytryshyn et al., eds, *To Siberia and Russian America: Three centuries of Russian eastward expansion, 1558-1867* (Portland, OR: Oregon Historical Society, 1985-1989), 3 vols. For a brief overview, consult Basil Dmytryshyn, "Russian expansion to the Pacific, 1580-1700: a historiographical review," *Slavic Studies (Surabu kenkyu)*, 25 (Sapporo, Japan: Hokkaido University, 1980): 1-25, or a later version of same in *Siberica*, 1, 1 (1990): 4-37.

3. V. S. Kusov, *Kartograficheskoe iskusstvo russkogo gosudarstva* (Moscow: Nedra, 1989): 17.

4. For discussion whether *chertezh* constitutes a map see, for example, V. S. Kusov, *op. cit.:* 8-11 and D. M. Lebedev, *Geografiia v Rossii XVII veka* (Moscow-Leningrad: Izdatel´stvo Akademii Nauk SSSR, 1949): 19.

Godunov.[5] So is a 1678 map attributed to the Russian ambassador to China Spathary (1675-1676), which in turn was used by Remezov in his later maps.

Boundary maps (*porubezhnye chertezhi*) are mentioned in the early documents, although none that are extant date back before 1700. Wars invariably occasioned information gathering and border and map revision. Most wars of Muscovite history were fought on Russia's western fronts, and the records ranging from Ivan the Terrible to Peter's time enumerate maps produced for those areas. In addition to established borders, frontier zones were also mapped. For European Russia, archival catalogues report hundreds of maps of *ukrainnye goroda* ("outlying," or "frontier" towns).[6] Siberia's conquest and the advancing frontier created security concerns of a new kind. Remezov commented that the original map of Siberia executed in 1667 at Tobolsk had not contained information on towns and counties and "unpeaceful lands,"[7] apparently pointing out his improvement on the former. Of additional concern for Siberian administrators was the location of *iasak* peoples, who were subject to the fur tax collected into the Moscow treasury. In 1696 a tsar's decree required Remezov to compose a map of Siberia depicting the "*iasak* districts" as well as "lands of enemies disturbing the peace and other landlords." In addition, a map was ordered showing the areas "from Tobolsk as far as the Kazakh Hordes and the Greater Bukharia and Khiva" (two were subsequently made).[8]

Remezov's maps are gathered in three atlases composed between 1699 and 1715.[9] In the old Russian tradition, they focus on river courses,[10] although a few city plans

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5. Remezov's hand-drawn copy of this map is the earliest extant map of Russia produced in Russia; this was also the first known printed map of Russian manufacture. See L. S. Berg, *Ocherk istorii russkoi geograficheskoi nauki (vplot' do 1923 goda)* (Leningrad: Izdatel´stvo Akademii Nauk SSSR, 1929): 22. This priority dating is considered uncertain by D. M. Lebedev and some others; B. P. Polevoi opposes it in "K trekhsotletiiu sozdaniia etnograficheskogo chertezha Sibiri 1673 g.", *Sovetskaia etnografiia*, 4 (1973): 78-88. I accept the persuasive arguments of F. A. Shibanov, who disproves historical reconstructions of Polevoi on the basis of cartographic evidence. See F. A. Shibanov, *Ocherki po istorii otechestvennoi kartografii* (Leningrad: Leningrad University, 1971): 11-24. On the relevant history of map printing, see Leo Bagrow, "The first map printed in Russian," *Imago Mundi*, 12 (1955): 152-159. On lost or unpublished earlier Russian maps of Siberia see Leo Bagrow, "The first Russian maps of Siberia and their influence on the West-European cartography of N. E. Asia," *Imago Mundi*, 8 (1951): 83-92.

6. V. S. Kusov, *op. cit.:* 13.

7. L. S. Bagrov, *Karty Aziatskoi Rossii* (SPb: Pereselencheskoe upravlenie, 1914): 11.

8. B. P. Polevoi, *art. cit.:* 85.

9. For a brief description see Leo Bagrow, "Semyon Remezov — a Siberian cartographer," *Imago Mundi*, 11 (1954): 111-126 and V. S. Kusov, *op. cit.:* 11. These are not to be confused with the famous *Kniga bol'shomu chertezhu* (*The book for the great map*) of 1627, which contains no maps and describes mostly European Russia. Remezov's Siberian atlas is accessible in Bagrow's facsimile edition: Semyon U. Remezov, *The atlas of Siberia* (*Imago Mundi*, Supplement I) ('s Gravenhage: Mouton & Co., 1958). For more on Remezov see L. A. Gol´denberg, *Semen Ul´ianovich Remezov* (Moscow: Nauka, 1965).

10. This is also a feature of pre-modern Chinese maps, but for a different reason. While in Siberia the primary motive for mapping rivers was interest in water transportation, in China the concern was primarily agriculture and irrigation needs. On this aspect of Chinese maps see Mei-Ling Hsu, "The Qin maps: A clue to later Chinese cartographic development," *Imago Mundi*, 45 (1993): 90-100.

are included as well. The graphic execution conforms to the *chertezh* style. There is no scale, no coordinates, and the orientation varies; distances between towns are stated in *versty* or days of journey. Italian influence has been postulated for Russian cartography of the sixteenth century.[11] Here there are some signs of modernization: certain maps have windrose cartouches (but no azimuth lines); later maps have rectangular grids but no degrees of latitude or longitude. China appears on a number of general maps which include also the fringes of Tibet and Central Asia (*Bukharia*). Parts of Mongolia, Semirechie, the Kazakh steppe and Altai mountains are shown in a number of regional or route maps containing information on frontier areas (nomad steppe, Russian fortification lines) or objects of Russian exploration (for example, maps of Lake Yamysh, which was rich in salt, or of mining locations; the Unkovskii expedition map). While rivers are shown with a degree of elaboration and even precision, the seacoast depiction is rudimentary (the southern rim of the map is completely neglected).[12]

The maps carry considerable information, written and graphic, on political entities of the steppe and taiga, including shifting headquarters of nomad confederations and sometimes even rulers' names. China is always shown behind a wall stretched west to east. A 1673 map edited by Remezov shows a remarkable awareness of the ethnic patchwork of Siberia, Central Asia, and the Far East (over ninety names, forty-some ethno-political groups).

The most significant difference between Remezov's copies of earlier maps and maps produced by Remezov himself is in the placement and identification of China. The earlier maps show China as three entities: *Bogdoiskoe tsarstvo* (the Qing state), *Nikanskoe tsarstvo* on the sea north of the Yangtse River, and *Kitai*, the one furthest to the south. The Spathary embassy of 1675 first informed the Russian authorities that the "Nikan tsardom" was Ming China, the news communicated to him on the way there by Russian merchants.[13] (Educated Russians were also aware of the western names for China; these were transcribed as "Khina" and "Katai.") Compared to the Godunov *chertezh*, that of Spathary shows considerable refinement of the hydrographic picture of the Asian interior. The coastline changes even more dramatically: Kamchatka peninsula clearly protrudes east beyond the map border; the sea between it and the mainland is called *More Amurskoe*, the Amur Sea. Korea and the Yellow Sea, especially the Gulf of Chih-li, receive

11. See, for example, B. A. Rybakov, *Russkie karty Moskovii XV–nachala XVI veka* (Moscow: Nauka, 1974): 16-20 and Leo Bagrow, "Italians on the Caspian," *Imago Mundi*, 13 (1955): 3-10 and "At the sources of the cartography of Russia," *Imago Mundi*, 16 (1962): 33-48.

12. Such cartographic "compression" is generally treated as evidence of a lack of information, but it is possible that accommodation to the confines of the standard paper size may also have something to do with this. The "Alexandrian sheet," which prevailed in later map-making, measured about 60 x 130-135 cm. There may also be other cultural-historical forces at work. Intriguing possibilities of cultural interpretation of maps are invoked in Cordell Yee's "introspection" thesis for Chinese cartography. See Cordell D. K. Yee, "A cartography of introspection: Chinese maps as other than European," *Asian Art* (Fall 1992): 29-47.

13. B. P. Polevoi, *art. cit.:* 84.

definition for the first time on a Russian map, and the South China Sea coastline is shown curving west. These features are later incorporated in the Remezov maps where there is also considerably more written information.[14]

Spathary's experience as both ambassador and cartographer is typical of the Russian intelligence practice, although his is the earliest mission from which a map has been found (discovered as late as the 1930s, by Leo Bagrow). As early as 1618 the first Russian travelers from Siberia to Mongol headquarters and then to China presented to the Ambassadorial Office written reports of their journeys with detailed descriptions of the environs traversed and routes traveled; to these were normally appended maps produced upon return. Embassies occasioned map production both "coming and going," so to speak. For example, prior to Spathary's embassy there was a flurry of activity when information on China was hurriedly compiled, maps searched for, and authorities consulted on the selection of the best route (river transport was preferred whenever possible). In turn, a number of maps were produced as a result of this journey which took place from 1675 to 1677.[15] Another was the 1692-1695 embassy of Isbrandt Ides; descriptions of the journey and maps were later published in Europe both by Ides (his map was much admired by Witsen and acknowledged to be superior to Witsen's own) and by the embassy secretary Adam Brand.[16]

Spathary's instructions, *nakaz*, specifically required him to gather intelligence on (1) routes from Siberia to China, (2) cities and localities of the Chinese state and routes connecting them, and (3) peoples inhabiting the area between Siberia and China and the state of their rulers' (*kniaz'ki,* "princelings") relations with the Russian tsar. In addition to a detailed report a map was expected showing "all the lands, towns and the route."[17] On the journey, his party was known to carry some "diverse astronomical instruments and compasses," and he himself was probably able to use the astrolabe.[18] A Swedish visitor to Moscow[19] reported in 1680 (that is,

14. S. U. Remezov, *op. cit.:* 150.

15. B. P. Polevoi, "Geograficheskie chertezhi posol´stva Spafariia", *Izvestiia AN SSSR*, *seriia geograficheskaia,* 1 (1969): 115-124.

16. Isbrandt, or Evert Ysbrandsoon Ides quickly published his travel memoir, which quickly became popular due to its superior illustrations and an excellent map. See, for example, Isbrandt Ides, *The three years land travels of his Excellency E. Ysbrandt Ides from Musco to China* (London, 1705). A Russian translation had to wait much longer: see Izbrant Ides and Adam Brand, *Zapiski o russkom posol´stve v Kitai, 1692-1695,* translated by M. I. Kazanin (Moscow: Nauka, 1967).

17. A. I. Andreev, *Ocherki po istochnikovedeniiu Sibiri.* I: *XVII v.*, 2nd ed. (Moscow-Leningrad: Izdatel´stvo Akademii Nauk SSSR, 1960): 75.

18. *Ibid:* 76; F. A. Shibanov (*op. cit.:* 27) outright denies that Spathary conducted astronomical observations. Earlier, this was pursuasively argumented by Baddeley: John F. Baddeley, *Russia, Mongolia, and China; being some record of the relations between them from the beginning of the XVIIth century to the death of the Tsar Alexei Mikhailovich, A.D. 1602-1672* (London: Macmillan, 1919; reprint New York: Burt Franklin, 196- ?).

19. A. I. Andreev, *op. cit.:* 53. The visitor was Jacob Reutenfels, whose description of Muscovy was published in Padua in 1680, but translated into Russian only in 1905. See Jacob Reutenfels, *De rebus Moscoviticus* (Patavii: Typis P.M. Frambotti, 1680).

shortly after the embassy's return) that a way to China had been traced on a Winius map, but neither his nor Spathary's extant maps show it. A caravan road from Astrakhan to China was marked on a map from a Remezov atlas of which a fragment survives.[20]

Spathary's report, *Stateinyi spisok*, described the route with distances in verst units (1 *versta* = 1.1 km) and days of travel, but without compass directions. It contains a description of seven routes leading into China. Three of those were effectively used by Russian ambassadors and merchant caravans. Spathary's route, which he was the first to take, was the easternmost, subsequently used by Ides in 1697 and Lange in 1732 and 1736.[21] He also was the first to present a sustained description of the Amur River. Some Russian historians make light of Spathary as geographer, but the three geographical points he makes in this essay, which forms a part of his *Tartary booklet*, are all well taken. They are: (1) the ease of reaching China by water from the Amur estuary by rounding the Korean peninsula (*nos Koreia*), (2) the lack of rivers connecting Siberia with China proper, and (3) the difficulty of reaching China from Europe by Northeast Passage.

The Russians first heard of the Amur after the foundation of Yakutsk. A Cossack expedition wintered over at its estuary in 1644, and a further expedition by Khabarov in 1650 built the first forts. The river network was quickly being investigated when Chinese authorities began to make first representations to Russian *voevody*. The maps of Remezov show considerable familiarity with the Amur landscape, its tributaries, and the location of taxable (*iasashnye*) and non-taxable indigenous groups. Most of the maps we have postdate the Treaty of Nerchinsk (1689). The Petlin map (1699) shows physical relief and a small island off the Amur estuary where Sakhalin ought to be. Several maps show in great detail the hydrographic system of the watershed between the Amur and the Anadyr (the Lvov map of 1710-1714[22], the Yakutsk map of 1710-1711[23]). The 1713 map of Asia by Kipriianov[24] is the first printed Russian map of Asia and may be the earliest one executed in modern style, although with an awkwardly superimposed grid and a vastly imperfect coastline;[25] it shows Japanese islands but not Sakhalin. The 1724 map of Northeast Asia, in a rectangular cylindrical projection, has degree

20. V. S. Kusov, *op. cit.:* map 8 on p. 18.

21. A. I. Andreev, *op. cit.:* 78.

22. A. V. Efimov, ed., *Atlas geograficheskikh otkrytii v Sibiri i v severo-zapadnoi Amerike, XVII-XVIII vv.* (Moscow: Nauka, 1964): map no. 25. Many of the maps reproduced in the atlas are discussed in Efimov's earlier book: A. V. Efimov, *Iz istorii velikikh russkikh geograficheskikh otkrytii v Severnom Ledovitom i Tikhom okeanakh, XVII-pervaia polovina XVIII v.* (Moscow: Gosudarstvennoe izdatel´stvo geograficheskoi literatury, 1950).

23. A. V. Efimov, ed., *Atlas ..., op. cit.:* map no. 24.

24. *Ibid.:* map no. 39.

25. The title of this map contains one more detail indicating Western influence: the map is no longer called *chertezh,* "sketch," or even *karta,* "map" — an earlier loan word, — but *tablitsa,* i.e. "tabula," from the Latin.

markings[26] and shows Asia separated from America prior to Bering's first expedition. The way the Amur is depicted and the written comments suggest that the map may have been composed with an eye toward showing the Russo-Chinese frontier zones; the date is only a few years short of 1727, when the Treaty of Kiakhta was signed. On the other hand, the Kirilov map of 1734 may have been designed to reflect the demarcation which had taken place in conjunction with the Treaty.[27]

In the period between 1682, when the Albazin war began, and the signing of the Treaty of Kiakhta, primarily concerned with trade, important negotiations regarding the Russo-Chinese border took place and a need for boundary demarcation was formally recognized. Such a demarcation was concluded in significant part prior to the signing in 1727, and followed by the separate Bura Protocol detailing the geography and process of demarcation and determination of the zones of influence.[28] The mountain ranges serving as watershed, rather than the river courses (as later), were chosen as dividers north of the Amur. Although the Chinese had prior knowledge of the area and had occasionally claimed tribute from the local groups, the Russians' satisfaction is evident even from this official document which, in fact, acknowledges that some of the lands thus assigned to Russia had never formerly been hers. (Some Chinese boundary markers within Russian territory were identified by Russian field cartographers in the Soviet period.)

In a curious twist of cartographic fate, the success of negotiations and the long-term stability of the border resulted in a relative neglect of geographic exploration of the region during much of the eighteenth century and until the 1840s. The maps produced during major Russian expeditions of the period show much greater interest in the northern Pacific coast or the Siberian interior that in the Amur area. The Amur region remains, comparatively speaking, a blank space on these later maps or else the north, i.e. Russian, bank of the Amur is detailed but not the south. See, for example, the 1746 map issued by the Naval Academy,[29] the Vertliugov map,[30] or the Chaplin map showing the results of the Bering expeditions. By

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26. Leo Bagrow, "A few remarks on maps of the Amur, the Tartar Strait and Sakhalin," *Imago Mundi*, 12 (1955): 130. Kirilov's atlas was published in unfinished form in 1734 after his death: *Atlas Vserossiiskoi Imperii, v kotorom vse eia tsarstva, gubernii, provintsii, uezdy i granitsy skol'ko vozmogli rossiiskie geodezisty opisat' onyia i v Landkarty polozhit' po dline i shirote tochno iz"iavliaiutsia…/Atlas Imperii Russici, Inquo omnia eius Regna, Provinciae, regiones et Fines, quantam a geodaetis Russis ea potuerunt depingi et delineari, iiuxta Longitudinem et Latitudinem exacte demonstrantur* (SPb, 1734; reprint 1959).

27. Kirilov's *Atlas* is in Latin; the easternmost parts of the general map of the Russian Empire (A. V. Efimov, ed., *Atlas..., op. cit.:* no. 48) show the results of the first Bering expedition, but not yet of the second expedition, which by then had been already completed. About Kirilov see, for example, M. G. Novlianskaia, *Ivan Kirilovich Kirilov* (Moscow-Leningrad: Nauka, 1964) and Leo Bagrow, "Ivan Kirilov, compiler of the first Russian atlas, 1689-1737," *Imago Mundi*, 2 (1937): 78-82.

28. Mark Mancall, *Russia and China: Their diplomatic relations to 1728* (Cambridge, MA: Harvard University Press, 1971): Appendix.

29. A. V. Efimov, ed., *Atlas ..., op. cit.:* map no. 55.

30. *Ibid.:* map no. 50.

contrast, the depiction of South China improved noticeably, borrowing heavily from European maps.

Throughout these decades, local government officials and, occasionally, entrepreneurs repeatedly appealed to St. Petersburg for the need to investigate the lay and resources of the region, to lay Russian claims to territory on the mainland and adjoining islands. But the government was busy elsewhere and did not wish to upset the peaceful trade which was still the primary consideration in Russo-Chinese relations and which had led Russians to China in the first place. In this respect, it must be recognized (as is implicitly reflected in the narrative sources) that the primary, and for a long time only, role assigned to the Amur vis-a-vis all the other rivers of Russian Asia was that of an arterial route to China, a role it has not been destined to fulfill in a meaningful way to this day.

Information flow

The 1673 Remezov "ethnographic" map of Siberia is thought by some authorities[31] to have been one of the sources for Witsen's map of Great Tartaria supplied to him by the head of the Siberian Office, Winius, a Dutchman in Russian service until 1703. In the 1950s, a map designated by Remezov as a *Vinius chertezh* was discovered by Andreev in a manuscript of Remezov's *Sluzhebnaia chertezhnaia kniga* (*Service book of maps*).[32] Described as the finest hydrographic map of Siberia and Muscovy, it shows definite borrowing from Spathary. In 1689 Winius was appointed Head of the Ambassadorial Office, where the documents and maps submitted by Spathary were readily available to him. It has been suggested also that Witsen may have had access to the Godunov map, a copy of which had been sent to Moscow.[33] Godunov's map was also copied by at least two Swedish authors. Another case of the transfer of Russian information may be inferred from Western rumors that the Yakutsk *voevoda* Frantzbekov (appointed in 1648), a Baltic German converted to Orthodoxy, fled to China.[34] The maps were considered confidential material, and those foreign visitors who, like Massa, acknowledge obtaining illegal copies of Russian *chertezhi* knew of the risks involved but also relied on the universal language of money.[35]

The flow of information, of course, was not unidirectional. The same Godunov map may also serve as an illustration of Western influence: in the center the Russian

31. B. P. Polevoi, *art. cit.:* 80-82.

32. A. I. Andreev, *op. cit.:* 52.

33. A. V. Efimov, *Iz istorii..., op. cit.:* 73-74.

34. Reported by the Swede Johan de Rodes from Moscow in 1652. See A. V. Efimov, *Iz istorii..., op. cit.:* 68.

35. This is an important point with Russian and Soviet historians. See, for example, M. P. Alekseev, *Sibir' v izvestiiakh zapadno-evropeiiskikh puteshestvennikov i pisatelei* (Irkutsk: Irkutskoe oblastnoe izdatel´stvo, 1941); B. A. Rybakov, *op. cit.:* 70-83; D. M. Lebedev, *op. cit.:* 37-41.

lettering says *Velikaia Tartariia*, "The Great Tartary," thus using a Western term for Siberia which Russians had never called "Tartaria" nor even, following the Russian pronunciation, "Tataria." Remezov was a highly skilled surveyor, town planner, and architect, and he knew enough about contemporary Western cartography to include at the beginning of his *Chorographic book*[36] a map of two hemispheres. One of his works begins with a preface to the "gentle reader" in a manner copied from European authors. In the seventeenth century, European geographical works constituted the largest single group of works translated into Russian.[37] In Remezov's days the *Great Atlas* of Bleau was translated in Moscow (Remezov stayed there in 1703). Paradoxically, while the text has been found in manuscript, not a single translated map has been discovered.[38] A Remezov comment conveys a distinct sense of confidence in the superiority of Russian (or his own) maps: included in the *Chorographic book* is a sketch of Siberia copied from a seventeenth-century European map. The purpose of the sketch is to present the state of knowledge prevailing elsewhere, which is frankly estimated at *nemnogo* ("not much.")

The case of Milescu Spathary is different. Spathary was a Greek nobleman from Moldavia (then under Ottoman suzerainty) who came to Moscow via Constantinople and two German courts. He brought with him some knowledge of Western activities in Asia, an acute political sense, and considerable exposure to European culture and public domain science, including geography. (In addition to writing a number of natural philosophy pamphlets, he is credited with bringing to Russia a geographical card game.[39]) Spathary's background and knowledge of languages got him the job of a diplomat and interpreter at the *Posol´skii prikaz* where he conversed with foreign visitors both before and after his China voyage. In particular, Spathary's fluent Latin allowed him easy contact with the Jesuits, both in Russia and China. Upon his return to Moscow he produced a *Tatar booklet* (*Tatarskaia knizhitsa*) which was largely derived from Martini's *De bello tartarico historia* (Cologne, 1645) and accompanied by the latter's map dated 1654.[40]

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36. Reproduced in S. U. Remezov, *op. cit.*

37. A. I. Sobolevskii, *Zapadnoe vliianie na literaturu Moskovskoi Rusi XV-XVII vekov* (SPb: Sinodal´naia tipografiia, 1899; reprint: The Hague, 1966); M. P. Alekseev, *op. cit.: passim*; D. M. Lebedev, *Ocherki po istorii geografii v Rossii XV i XVI vekov* (Moscow: Izdatel´stvo Akademii Nauk SSSR, 1956): 214-220; O. A. Aleksandrovskaia, *Stanovlenie geograficheskoi nauki v Rossii v XVIII veke* (Moscow: Nauka, 1989): 21-27.

38. D. M. Lebedev, *Geografiia v Rossii..., op. cit.:* 209-211. It is also characteristic of the situation in Russia that while foreigners who had left the country were free to publish maps of Russia and Northeast Asia, within Russia both maps and travel reports were kept in manuscript form in government archives, sometimes for centuries. See, for example, Izbrant Ides and Adam Brant, *op. cit.:* Introduction. European names loom so large in the history of Russian cartography that Leo Bagrow's posthumous work on the subject contains a special section on "Europeans in Russia": L. Bagrow, *A history of Russian cartography up to 1800*, ed. by Henry W. Castner (Wolf Island, Ontario: Walker press, 1975): chapter 3.

39. O. A. Belobrova, "Geografiia v vide kolody kart (Iz perevodcheskoi deiatel´nosti v Moskve Nikolaia Spafariia)," *Trudy Otdela drevne-russkoi literatury*, 33 (1979): 108-126.

40. A. I. Andreev, *op. cit.:* 80; L. Bagrow, "A few remarks…," *art. cit.:* 128. The text of Spathary's translation of Martini's description of China is reproduced in J. F. Baddeley, *op. cit.:* 2: 208-214.

Spathary was acquainted with a number of Jesuits residing or traveling in China, among them Verbiest, who gave Spathary access to some Chinese geographical information and later offered to send his own map to Peter I.[41] In turn, Spathary's map is thought to have been used by Philippe d'Avril, who met with Spathary in Moscow during 1687-1688.[42]

Thus by the late seventeenth century the cartography of East Central Asia was beginning to develop a truly international character. Certainly, the development of Russian cartography under Peter the Great and the massive state-sponsored exploration of the northern Pacific (as well as promotion of modern science) firmly embedded Russia in the international academy. Russian maps, first printed in the Netherlands, were soon produced in Moscow and later St. Petersburg, and in terms of information relating to Russia could hold their own on the international market. Their circulation abroad was facilitated by the use on these maps of inscriptions first in Latin, and later also in German and French. Peter had established active commercial and academic links with the Netherlands, the center of map production, printing, and engraving. The long-term retention by the Russian government of Joseph-Nicolas Delisle as a member of the Imperial Academy of Sciences, facilitated communication with the country where important scientific advances in cartography were taking place at the time. (Although Delisle was not of a high opinion regarding the state of Russian cartography and did not publish a map of his own until his return to France, he assiduously copied and sent to France Russian maps; this has earned him the aspersion of some Russian historians of science.)

It is more difficult to determine the amount of information gained by the Russians from Chinese maps. The map of Colonel Baidon (*ca.* 1687) shows the relative situation of the Amur and Yenisei (Albazin, since surrendered by Russians to China, is still marked on it). It also looks remarkably like the Chinese map of Northeast Asia (*ca.* 1690) reproduced by Fuchs.[43] The use of maps at Nerchinsk negotiations is noted in the sources, but no maps explicitly related to the treaty have been published. Some Chinese maps of Russian Asia were produced upon the completion of the 1712-1714 embassy to the Volga Kalmyks. It has been suggested that this map, sketched in secret from the Russian military escort, shows some influence of the Godunov *chertezh*.[44] Prior to the demarcation effected with the Treaty of Kiakhta the Chinese tried, at least once, to send in emissaries charged with locating Chinese markers within Russian territory, but the party was not admitted (1722.)[45] The Jesuit cartographic efforts under K'ang-hsi and the publication of the *New atlas of China* by d'Anville (1737) may be considered the apex and at the same time the beginning of a decline of the Chinese geographic

41. M. Mancall, *op. cit.:* 80.

42. A. I. Andreev, *op. cit.:* 81; L. Bagrow, "A few remarks…," *art. cit:* 129.

43. L. Bagrow, "A few remarks…," *art. cit.:* 128 and 131.

44. The Tu Li-shen map, published in Peking in 1723 and in Russia in 1764. See A. V. Efimov, *Iz istorii..., op. cit.:* 124 and note 2; A. V. Efimov, ed., *Atlas..., op. cit.:* map no. 36.

45. M. Mancall, *op. cit.:* 228.

expertise on the Russian border. The evidence for the decrease in the cartographic sophistication of the Chinese side is indirect. The descriptions of map use during the border demarcation of 1727 leave no doubt that by then the Chinese depended on Russian maps for guidance, and that the Russians came to the table assuming a lack or inadequacy of Chinese maps.[46] Leo Bagrow has shown why the Amur-region maps in the atlas of K'ang-hsi could not be based on Jesuit surveys; he proposes that they relied on prior Chinese information instead.[47] In several maps of the atlas based on maps sent to d'Anville by the Jesuits (Lake Baikal and parts of Transbaikalia and Amuria) he includes the notation to the effect that the Russian knowledge of the places and routes to the north is superior.[48]

Periodization

From the perspective of organization of cartographic production, the history of Russian map-making falls into three unequal periods. The early period, roughly to 1711, may be called the "*Prikaz* period," by the name of the chief unit of state administration ordering and producing as well as using maps. The second period, from 1711 (when the Senate was created) to 1765, forms a transitional stage and may be conditionally termed "the Senate period," to reflect the transfer of the cartographic initiative to the new, central executive body. The third period may be called "Institutional," in the sense of multiple and diverse institutions, from ministries to academic departments to dedicated map offices engaged in cartographic production and research. In a way, the Soviet period was a continuation of this period and does not constitute a rupture.

If this periodization does not afford room for anything like the cartographic revolution experienced by West European countries under the impact of early commercial map publishing in the wake of the Ptolemaic revival, it is because Russia never experienced anything like it. Among important reasons for that are the late and sporadic introduction of printing in Russia, complete absence of private Russian map making, the tight government control, and numerous and often opaque limitations continuing to affect the printing and publishing of maps. Patterns of periodization developed by other historians of cartography highlight the specifically Russian nature of the chronological benchmarks: expansion into Siberia, reaching the Pacific, Peter the Great's reign, etc.[49]

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46. See, for example, *ibid.:* Appendix.

47. L. Bagrow, "A few remarks…," *art. cit.:* 129-130 and elsewhere.

48. J. B. B. d'Anville, *Nouvel atlas de la Chine, de la Tartarie chinoise et du Thibet* (La Haye: Scheurleer, 1737).

49. Typically, Leo Bagrow, in *A history of Russian cartography..., op. cit.,* names his Chapter 2 of Part I *Vostok: The early cartography of Siberia* and Part II, *The imprint of Pyotr Alekseyevich.*

The historical schema offered above also makes sense cartographically. The year 1711 is also when the greatest cartographer of Russia and Siberia, Semen Remezov (b. 1642), completed most of the work for his *Atlas of Siberia*, the last major work done in the style of "traditional" Russian maps. The Russo-Chinese negotiations over the Russian presence on the Amur, the Albazin war and the Treaty of Nerchinsk (1689) fall within the period of Remezov's active employment by the *voevoda* of Tobolsk. The year 1701 saw the foundation of the Mathematical Navigational School in Moscow where foreign teachers instructed pupils in modern astronomy, navigation, and surveying; the first professional Russian topographers graduated from this school and the Naval Academy, opened in St. Petersburg in 1715. Of additional, great impact on the study of Siberia and adjoining parts of Central Asia was the transfer to Tobolsk and other Siberian towns of thousands of Swedish prisoners of war after the Russian victories of 1709 in the Great Northern War. Besides the resulting publication of several important maps of Siberia which included areas extended toward China (e.g., Strahlenberg, Renat), Siberia was thrown open to surveying and research, and precedent was created for widespread participation of foreigners in the process. Propelled also by Peter's efforts to survey and explore his empire's frontiers, and encouraged by his contacts with West European scholars (like Witsen or the Jesuits, some of whom were expert both in Western and Chinese geography) and publishers, Russian cartography was quickly and decisively modernized.[50] The 1713 map by Kipriianov, published while Remezov was still living, underscores the dramatic transformation and makes plain why Remezov's oeuvre was to remain in manuscript and thoroughly neglected until this century.

Following Peter's decree, the Russian Academy of Sciences was founded in 1727, the year when the Russo-Chinese Treaty of Kiakhta was signed and a partial border demarcation was effected. In 1739, a separate Geographical Department was created at the Academy, on the initiative of Joseph-Nicolas Delisle, to produce a general map of Russia. (Through Delisle a number of Russian maps, including those of Siberia, found their way to France). The first such map, by Kirilov, was published in 1734. The production of the Academic *Atlas Russicus* in 1745 was the main achievement of this period. Included in the atlas were the maps of Russian Asia and the Pacific based on the outcomes of the great northern expeditions of Bering and others.

In 1756 the first academician of Russian origin, Lomonosov, became head of the Geographical Department. Greatly preoccupied with methodology and teaching of science, his is a transitional figure in the history of Russian geography.[51] In 1765,

50. Lebedev considers the start of map printing in Russia Peter's greatest contribution to the development of Russian geography. D. M. Lebedev, *Geografiia v Rossii petrovskogo vremeni* (Moscow-Leningrad: Izdatel´stvo Akademii Nauk SSSR, 1950): 182-199. For a look at modernization processes in Russian cartography in the eighteenth century, see L. A. Goldenberg and A. V. Postnikov, "Development of mapping methods in Russia in the eighteenth century," *Imago Mundi*, 37 (1985): 63-80.

51. L. S. Berg, *op. cit.:* 26. For a sketch of Lomonosov's contribution to geography see O. A. Aleksandrovskaia, *op. cit.:* 168-174.

coincidentally the year of his death, Catherine II created the Cadastral Demarcation Commission (*Mezhevaia komissiia*) and started the major effort of large-scale surveying which took ninety years to complete.[52] Also in 1765 the "father of Siberian studies" G. F. Müller returned to St. Petersburg with numerous documents, including maps (many by Remezov), dating from the sixteenth to the early eighteenth century, which he found in central and local Siberian archives.

From then on, the number of offices and institutions engaged in surveying and map production grew and diversified. Cartography largely passed from the Academy into the hands of specialists often associated with military topographic agencies. Another, Privy Geographical Department was created and soon transformed into the Map Depot (1797-1800), which in turn was subsumed by the Ministry of War. The Military-Topographic Depot became the lead institution in charge of surveying, production and printing of maps. The Corps of Military Topographers (founded in 1824) trained the majority of rank and file of the geodesic service run by the General Staff (often engaged on civilian projects).[53] Even the Geographical Society, founded in 1845 with idealistic research purposes and partly in opposition to government, quickly was forced into a paramilitary mould and supported projects colored by great Russian nationalism.[54] A good example is the great explorer of Mongolia, Tibet and Sinkiang, Przheval´skii (d. 1888), who started his career as an instructor of geography in a military school and died in the rank of lieutenant colonel of the General Staff.[55]

On the whole, it appears that the modern mapping of Siberia's southern borderlands received attention only in spurts (and little of it was made public). Discovered in the 1620s, Baikal received its own atlas only in 1903. By 1779, eighteen points in Siberia were astronomically determined — more than in some European countries but terribly few for the expanse of the territory. In the early nineteenth century naval expeditions of Lisianskii, Krusenstern and others considerably added to astronomical determination of locations on the Pacific coast from Kamchatka to Sakhalin, the Amur estuary, and Japan. However, important mistakes were also made — for example, Sakhalin, pictured in the *Atlas* of 1745 as an island, became a peninsula in some later maps; this mistake was not fully corrected until 1858. Triangulation was introduced in the western parts of the Empire in 1816, but reached Siberia only in the twentieth century.

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52. L. S. Berg, *op. cit.:* 27.

53. A. V. Postnikov, *Razvitie krupnomasshtabnoi kartografii v Rossii* (Moscow: Nauka, 1989): 52-53.

54. Mark Bassin, "The Russian Geographical Society, the 'Amur epoch,' and the great Siberian Expedition of 1855-1863," *Annals of the Association of American Geographers,* 73 (June 1983): 240-256 and Wladimir Berelowitch, "Aux origines de l'ethnographie russe : la Société de géographie dans les années 1840-1850," *Cahiers du Monde russe et soviétique,* 31, 2-3 (1990): 265-273.

55. Daniel Brower, "Imperial Russia and its Orient: the renown of Nikolai Przhevalsky," *Russian Review*, 53, 3 (July 1994): 367-381.

When in the year 1805 Russian vessels entered a Chinese port (Canton) for the first time, this marked a turning point in Russo-Chinese diplomacy previously conducted only overland. The Russian knowledge of geography and navigation helped to shift the power balance in Russian favor and eventually led to significant territorial gains consolidated by the Treaty of Peking (1860).

The several stages of the Russian exploration and mapping of East Siberia, the Far East and Mongolia sketched above reflected changing priorities and policies of the Russian state, the configurations of neighboring domains, and the variations in the Russo-Chinese balance of power. Trade, settlement, and the issues of sovereignty commanded in various degrees the attention and commitment of the officialdom, the military, Russian settlers, and diverse groups of merchants.

The progressive Russian mastery of the cartography of the eastern frontier is illustrative of these concerns and diverse sources. Russian surveys benefited from the stability of the border negotiated under the Treaty of Nerchinsk (1689), while Chinese attention was focused on establishing control over the Mongols and preventing Russian penetration of the Transbaikal frontier rather than extinguishing the Russian presence altogether. Eventually, Russian settlement and naval presence on the Pacific and Russia's possession of superior and documented geographical information on frontier areas became a decisive factor in the Russian acquisition of the Amur-Ussuri region.

In the post-1860 period, strategic interests colored the two major efforts given to the Sino-Russian border: one was the period initiated by the Crimean War and famous for the Murav´ev initiative on the Amur (1855-1863); the other preceded and coincided with the construction of the Trans-Siberian railroad and its Manchurian branch. In between the two periods, Russia began a massive advance into Central Asia, and the bulk of exploration and surveying activity shifted there. Przheval´skii again provides a telling illustration: his expeditions shifted from the Amur-Ussuri region, firmly under Russian control, to internationally sensitive areas contested in the Great Powers game.[56] Finally, the heavy emphasis given military needs is attested to by development, prior to WWI, of a map of the Asiatic border zone on thirty-two sheets (scale 1 inch: 40 verst) and a military road map for Asiatic Russia (1 inch: 50 verst).[57] One sees in this a continuation of the pattern set in the early eighteenth century, where geography's acknowledged *raison d'être* was the "exploration of resources for state use"[58] and where primary structural support

56. *Ibid.:* 372-373.

57. L. S. Berg, *op. cit.:* 29. Civilian projects were also pursued, but took much longer to complete: the general cadastral survey of Russia, begun in 1765, was not completed until 1915 (O. A. Aleksandrovskaia, *op. cit.:* 38). For a Soviet perspective on this late institutional period of the Russian geographical enterprize see G. V. Naumov, *Russkie geograficheskie issledovaniia Sibiri v XIX-nachale XX v.* (Moscow: Nauka, 1965) and T. N. Oglezneva, *Russkoe Geograficheskoe Obshchestvo: izuchenie narodov severo-vostoka Azii, 1845-1917* (Novosibirsk: Nauka, 1994).

58. O. A. Aleksandrovskaia, *op. cit.:* 192.

of the science developed not within universities or the Academy of Sciences, but within government institutions.

Washington State University
History Department
Box 644030
Pullman WA 99164-4030

e-mail : tolmache@wsu.edu